

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Jae-Sun CHA et al.

Examiner: Pierre Louis DESIR

Serial No.: 10/588,248

Art Unit: 2617

Filed: April 30, 2007

Docket: 1403-20 PCT US
(OPP20061491US)

Dated: July 20, 2011

For: **HANDOVER METHOD IN WIRELESS PORTABLE INTERNET
SYSTEM**

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313

TRANSMITTAL OF APPELLANTS' BRIEF ON APPEAL

Sir:

Enclosed please find APPELLANTS' BRIEF.

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If the enclosed credit card payment is insufficient for any reason or becomes detached, please charge the required fee under 37 C.F.R. §1.17 to Deposit Account No. 50-4053. Also, in the event any additional extensions of time are required, please treat this paper as a petition to extend the time as required and charge Deposit Account No. 50-4053.

Respectfully submitted,



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APPELLANTS' BRIEF ON APPEAL

REAL PARTIES IN INTEREST

The real parties in interest are: Electronics and Telecommunications Research Institute, having an office at 161, Gajeong-dong, Yuseong-gu, Daejeon, Republic of Korea; Samsung Electronics Co., Ltd., having an office at 416, Maetan-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Republic of Korea; KT Corporation, having an office at 206, Jungja-don, Bundang-gu, Seongnam-city, Kyeonggi-do, Republic of Korea; SK Telecom Co., Ltd., having an office at 99, Seorin-dong, Jongro-gu, Seoul, Republic of Korea; KTFreetel Co., Ltd., having an office at 890-20, Daechi-dong, Gangnam-gu, Seoul, Republic of Korea; and Hanaro Telecom., Inc., having an office at Shindongah Fire & Marine Insurance Building 43, Taepyongno2-ga, Jung-gu, Seoul, Republic of Korea, the assignees of the subject application.

RELATED APPEALS AND INTERFERENCES

To the best of Appellants' knowledge and belief, there are no currently pending related appeals, interferences or judicial proceedings.

STATUS OF CLAIMS

The original application filed on August 2, 2006 contained Claims 1-19. In a preliminary amendment dated November 30, 2007, Claims 1-19 were cancelled without prejudice, and Claims 20-35 were newly presented. In a response dated February 1, 2010, Claim 27 was amended. In a response dated January 25, 2011, Claims 20, 24, 27, 30 and 33 were amended.

Thus, Claims 20-35 are pending. Claims 20, 24, 27, 30 and 33 are in independent form. Claims 20-35 stand rejected and are appealed.

STATUS OF AMENDMENTS

To date, all of the amendments to the claims have been entered. Thus, the Appendix to this Appeal Brief includes Claims 20-35, the status of which are indicated as “Previously Presented.”

SUMMARY OF CLAIMED SUBJECT MATTER

The invention, as recited in Claim 20, relates to a method of performing a handover on a subscriber station in a target base station. (Specification, page 11, paragraph 70; and FIG. 12)¹. A ranging request message including a base station identifier of a previous serving base station is received from the subscriber station when a drop situation is detected by the subscriber station. (Specification, page 9, paragraphs 59-60, and page 11, paragraph 71; and FIG. 9, S120-S160, and FIG. 12, S200). Information of the subscriber station is acquired through the base station identifier of the previous serving base station. (Specification, pages 11-12, paragraph 72; and FIG. 1, S210 and S220). A response message on the ranging request message is transmitted to the subscriber station. (Specification, page 12, paragraph 73; and FIG. 12, S230). Network re-entry is performed on the subscriber station. (Specification, page 12, paragraph 73; and FIG. 12, S240).

¹ Although a citation for each feature of the claims is provided herein, Appellants note that support may be found elsewhere in the written description.

The invention, as recited in Claim 24, relates to a method of performing a handover in a subscriber station of a communication system. (Specification, page 11, paragraph 70; and FIG. 12). A ranging request message including a base station identifier of a previous serving base station is transmitted to a target base station when the subscriber station detects a drop situation. (Specification, page 9, paragraphs 59-60, and page 11, paragraph 71; and FIG. 9, S120-S160, and FIG. 12, S200). A ranging response message is received from the target base station that has acquired information of the subscriber station through the base station identifier of the previous serving base station. (Specification, pages 11-12, paragraphs 72-73; and FIG. 12, S210-S230). Network re-entry is performed through the target base station. (Specification, page 12, paragraph 73; and FIG. 12, S240).

The invention, as recited in Claim 27, relates to a method of generating a message for a handover in a subscriber station. (Specification, page 9, paragraph 58; and FIG. 9). A ranging request message is generated at the subscriber station for transmission to a target base station when the subscriber station detects a drop situation. (Specification, page 9, paragraph 59; and FIG. 9, S120-S140). A base station identifier of a previous serving base station is inserted into the ranging request by the subscriber station. (Specification, page 9, paragraph 60; and FIG. 9, S150). The ranging request message is transmitted from the subscriber station to the target base station. (Specification, page 9, paragraph 60; and FIG. 9, S160).

The invention, as recited in Claim 30, relates to a method of performing a handover on a subscriber station in a target base station. (Specification, page 11, paragraph 70; and FIG. 12). A ranging request message including a base station identifier of a previous serving base station is received from the subscriber station when a drop situation is detected by the subscriber station. (Specification, page 9, paragraphs 59-60, and page 11, paragraph 71; and FIG. 9, S120-S160, and FIG. 12, S200). A response message on the ranging request message is transmitted to the subscriber station. (Specification, page 12, paragraph 73; and FIG. 12, S230). Network re-entry is performed on the subscriber station. (Specification, page 12, paragraph 73; and FIG. 12, S240).

The invention, as recited in Claim 33, relates to a method of performing a handover in a subscriber station. (Specification, page 11, paragraph 70; and FIG. 12). A ranging request message including a base station identifier of a previous serving base station is transmitted to a target base station when the subscriber station detects a drop situation. (Specification, page 9, paragraphs 59-60, and page 11, paragraph 71; and FIG. 9, S120-S160, and FIG. 12, S200). A response message on the ranging request message is received from the target base station. (Specification, pages 11-12, paragraphs 72-73; and FIG. 12, S210-S230). Network re-entry is performed through the target base station. (Specification, page 12, paragraph 73; and FIG. 12, S240).

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

Whether Claims 20-35 are unpatentable under 35 U.S.C. §103(a) over “Inter-BS communication for IEEE 802.16e Handoff,” 2003-05-14 to *Koo et al.* (hereinafter, *Koo*).

ARGUMENT

I. Claims 20-35 are patentable over *Koo*

A. Independent Claim 20

The Examiner contends that *Koo* teaches, suggests, or renders obvious each and every element of the claims.²

Claim 20 recites a method of performing a handover on a subscriber station in a target base station. A ranging request message including a base station identifier of a previous serving base station is received from the subscriber station when a drop situation is detected by the subscriber station. Information of the subscriber station is acquired through the base station identifier of the

previous serving base station. A response message on the ranging request message is transmitted to the subscriber station. Network re-entry is performed on the subscriber station.

Koo illustrates a hand-over procedure in which a Mobile Subscriber Station (MSS) measures S/R, and a serving base station sends a HO-notification to a target base station.³ The HO-notification includes a sender BS-ID, a target BS-ID, a unique identifier of the MSS, and an estimated time of the handover.⁴ The subscriber station sends a ranging request to the target base station, and the target base station sends a ranging response to the subscriber station.⁵

The Examiner relates the measurement of S/R at the MSS in *Koo* to the detection of a drop situation at the subscriber station in Claim 1.⁶ S/R is undefined in *Koo*, but is assumed by Appellants to represent a signal to noise ratio in a communication system. The detection of a signal to noise ratio relates to currently established communication sessions. Accordingly, this measurement of an S/R of a current connection differs from detection of a drop situation in which there is no current connection. Thus, *Koo* fails to disclose the detection of a drop situation by the subscriber station, as recited in Claim 20.

Koo fails to provide any disclosure indicating that the ranging request message from the subscriber station includes a base station identifier of a previous serving base station, as recited in Claim 20. In response to previous arguments, the Examiner maintains that it is obvious for this base station identifier to be included in the ranging request message, because “there would be some expectation to also include the serving BS-ID since the target base station would need to map the MS-ID with the serving BS-ID to acquire information related to mobile station so that appropriate services may be rendered to the MS.”⁷ However, this is a general conclusory statement by the Examiner, and the Examiner has failed to provide any support for this assertion. The Federal Circuit has stated that “rejections on obviousness cannot be sustained with mere conclusory statements;

² See Final Office Action dated February 16, 2011, page 3.

³ See *Koo*, pages 9-10.

⁴ See *Koo*, page 5.

⁵ See *Koo*, pages 9-10.

⁶ See Final Office Action dated February 16, 2011, page 4.

instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006). See also *KSR*, 550 U.S. at ___, 82 USPQ2d at 1396 (quoting Federal Circuit statement with approval). Further, *Koo* actually teaches away from the inclusion of the BS-ID in the ranging request message for the reasons set forth below.

As described above, in *Koo*, the HO-notification from the serving BS provides identifiers of both the serving BS and the MS, as well as an estimated handover time. Accordingly, a mapping of the serving BS and the MS is provided from the serving BS to the target BS with the HO-notification. Therefore, it would not be obvious for *Koo* to require a second mapping of the serving BS and the MS when the ranging request is received from the MS. There would be no expectation to also include a serving BS-ID in the ranging request of *Koo* because such a mapping would be redundant. As such, *Koo* only teaches that the serving BS provides the target BS with its serving BS-ID, and teaches away from the inclusion of a serving BS-ID in the ranging request from the subscriber station.

The present invention allows for network re-entry without the use of any prior HO-notification message (mapping) sent from a serving BS, by including the identifier of the previous BS in the ranging request message sent from the subscriber station to the target BS. This type of network re-entry is applicable when a service is dropped. *Koo* teaches that the MSS transmits the MSSHO_REQ message or the HO_RSP message to the serving base station after measuring S/R. The serving base station directly transmits its ID to the target BS through the HO-notification message. Accordingly, *Koo* fails to teach, suggest or render obvious the reception of a ranging request message, which includes a base station identifier of a previous serving base station, at a target base station from a subscriber station when a drop situation is detected by the subscriber station, as recited in Claim 20. Thus, Claim 20 is patentable over *Koo*.

⁷ See Advisory Action dated May 10, 2011, page 1.

B. Independent Claims 24, 27, 30 and 33

The Examiner also rejected independent Claims 24, 27, 30 and 33 under 35 U.S.C. §103(a) contending that Claims 24, 27, 30 and 33 contained similar recitations as those set forth in Claim 11.⁸

Appellants assert that Claims 24, 27, 30 and 33 are patentable for at least the reasons presented above with regard to Claim 11. More specifically, Claims 24, 27, 30 and 33 each recite that a ranging request message, which is transmitted from a subscriber station to a target base station when the subscriber station detects a drop situation, includes a base station identifier of a previous serving base station. As described above with regard to Claim 20, *Koo* fails to teach, suggest or render obvious this element.

Thus, *Koo* fails to disclose each and every element of Claims 24, 27, 30 and 33. Therefore, it is respectfully submitted that Claims 24, 27, 30 and 33 are patentable over *Koo*.

C. Dependent Claims 21-23, 25, 26, 28, 29, 31, 32, 34 and 35

Claims 21-23, 25, 26, 28, 29, 31, 32, 34 and 35 are patentable at least by virtue of their respective dependency from independent Claims 20, 24, 27, 30 and 33. The patentability of the independent claims is described above. It is respectfully submitted that because the above arguments place the independent claims in condition for allowance, these dependent claims are also believed to be in condition for allowance.

Therefore, *Koo* fails to disclose each and every element of the dependent claims, and it is respectfully submitted that Claims 21-23, 25, 26, 28, 29, 31, 32, 34 and 35 are patentable over *Koo*.

Accordingly, Appellants assert that Claims 20-35 are allowable over *Koo*, and respectfully request withdrawal of the rejection under 35 U.S.C. §103(a).

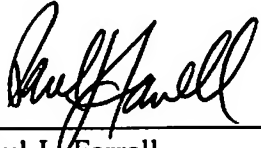
CONCLUSION

It is well settled that in order for a rejection under 35 U.S.C. §103(a) to be appropriate, the claimed invention must be shown to be obvious in view of the prior art as a whole. A claim may be found to be obvious if it is first shown that all of the recitations of a claim are taught in the prior art or are suggested by the prior art. In re Royka, 490 F.2d 981, 985, 180 U.S.P.Q. 580, 583 (C.C.P.A. 1974), cited in M.P.E.P. §2143.03.

The Examiner has failed to show that all of the recitations of Claims 20-35 are taught, suggested or rendered obvious by the art of record, or the combination thereof. Accordingly, the Examiner has failed to make out a prima facie case for an obviousness rejection.

As the Examiner has failed to make out a prima facie case for the obviousness rejections, the rejections of Claims 20-35 must be reversed.

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⁸ See Final Office Action dated February 16, 2011, pages 5-6.

CLAIMS APPENDIX

1-19. (Cancelled)

20. (Previously Presented) A method of performing a handover on a subscriber station in a target base station, the method comprising:

receiving a ranging request message including a base station identifier of a previous serving base station from the subscriber station when a drop situation is detected by the subscriber station;

acquiring information of the subscriber station through the base station identifier of the previous serving base station;

transmitting a response message on the ranging request message to the subscriber station; and
performing network re-entry on the subscriber station.

21. (Previously Presented) The method of claim 20, wherein the acquiring comprises:

requesting the information of the subscriber station to the previous serving base station based on the base station identifier of the previous serving base station; and

receiving the information of the subscriber station from the previous serving base station.

22. (Previously Presented) The method of claim 20, wherein the ranging request message further includes a media access control (MAC) address of the subscriber station.

23. (Previously Presented) The method of claim 20, wherein a length of the base station identifier of the previous serving base station length is 48 bits.

24. (Previously Presented) A method of performing a handover in a subscriber station of a communication system, the method comprising:

transmitting a ranging request message including a base station identifier of a previous serving base station to a target base station when the subscriber station detects a drop situation;
receiving a ranging response message from the target base station that has acquired information of the subscriber station through the base station identifier of the previous serving base station; and
performing network re-entry through the target base station.

25. (Previously Presented) The method of claim 24, wherein the ranging request message further includes a media access control (MAC) address of the subscriber station.

26. (Previously Presented) The method of claim 24, wherein a length of the base station identifier of the previous serving base station is 48 bits.

27. (Previously Presented) A method of generating a message for a handover in a subscriber station, the method comprising:

generating a ranging request message at the subscriber station for transmission to a target base station when the subscriber station detects a drop situation;

inserting a base station identifier of a previous serving base station into the ranging request by the subscriber station; and

transmitting the ranging request message from the subscriber station to the target base station.

28. (Previously Presented) The method of claim 27, further comprising inserting a media access control (MAC) address of the subscriber station into the ranging request message.

29. (Previously Presented) The method of claim 27, wherein the inserting further comprises setting a length of the base station identifier of the previous serving base station to 48 bits.

30. (Previously Presented) A method of performing a handover on a subscriber station in a target base station, the method comprising:

receiving a ranging request message including a base station identifier of a previous serving base station from the subscriber station when a drop situation is detected by the subscriber station;
transmitting a response message on the ranging request message to the subscriber station; and
performing network re-entry on the subscriber station.

31. (Previously Presented) The method of claim 30, wherein the ranging request message further includes a media access control (MAC) address of the subscriber station.

32. (Previously Presented) The method of claim 30, wherein a length of the base station identifier of the previous serving base station is 48 bits.

33. (Previously Presented) A method of performing a handover in a subscriber station, the method comprising:

transmitting a ranging request message including a base station identifier of a previous serving base station to a target base station when the subscriber station detects a drop situation;
receiving a response message on the ranging request message from the target base station;
and
performing network re-entry through the target base station.

34. (Previously Presented) The method of claim 33, wherein the ranging request message further includes a media access control (MAC) address of the subscriber station.

35. (Previously Presented) The method of claim 33, wherein a length of the base station identifier of the previous serving base station is 48 bits.

EVIDENCE APPENDIX

There is no evidence submitted pursuant to 37 C.F.R. 1.130, 1.131, 1.132 or entered by the Examiner and relied upon by Appellants.

RELATED PROCEEDINGS APPENDIX

There are no known decisions rendered by a court or the Board in any proceeding identified pursuant to paragraph (c)(1)(ii) of 37 C.F.R. 41.37.